

## Gravity Independent Compressor, Phase I

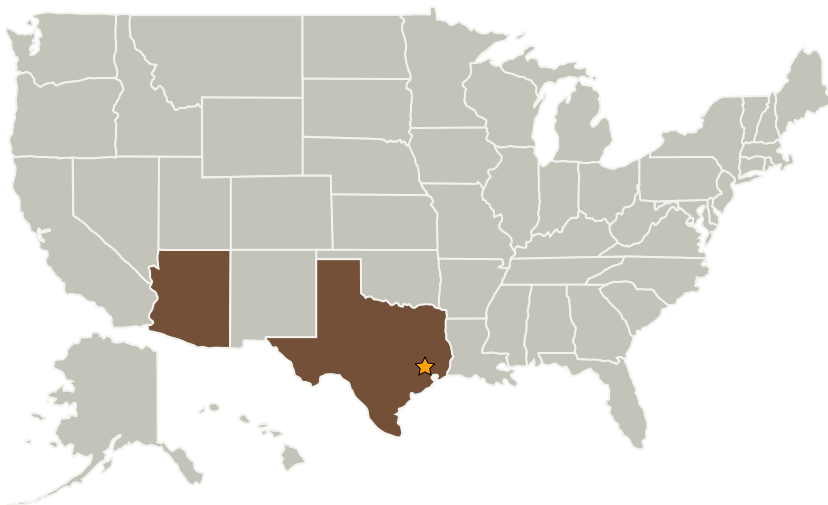
Completed Technology Project (2006 - 2006)



## Project Introduction

We propose to develop and demonstrate a small, gravity independent, vapor compression refrigeration system using a linear motor compressor which effectively addresses the efficiency, lubrication, scalability, and/or longevity issues limiting current space flight refrigeration systems. Unlike previous and currently used thermoelectric, Stirling, oil-free reciprocating and diaphragm compressor systems, the linear compressor will provide very high efficiency, excellent capacity modulation, nearly unlimited scalability, and very long life all due to the hydrostatic bearing of the linear compressor and use of the reverse-Rankine cycle. The linear can also readily be developed as a single unit two-stage compressor for higher lift applications.

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas
SunDancer Development, Inc.	Supporting Organization	Industry	Tucson, Arizona



Gravity Independent Compressor, Phase I

## Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	1
Project Management	2
Technology Areas	2

## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Center / Facility:**

Johnson Space Center (JSC)

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

# Gravity Independent Compressor, Phase I

Completed Technology Project (2006 - 2006)



## Primary U.S. Work Locations

Arizona

Texas

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

Carlos Torrez

## Technology Areas

### Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - └ TX06.3 Human Health and Performance
    - └ TX06.3.7 System Transformative Health and Performance Concepts